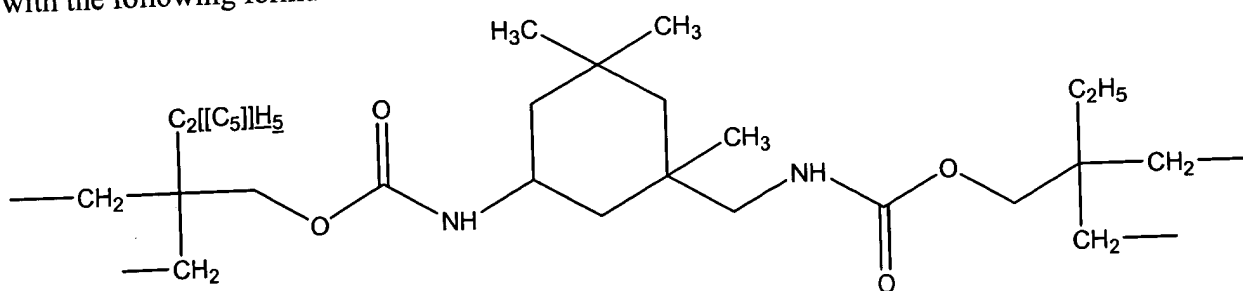


# Amendment to the Specification:

Please amend the specification at page 1 by replacing the last line with the following:

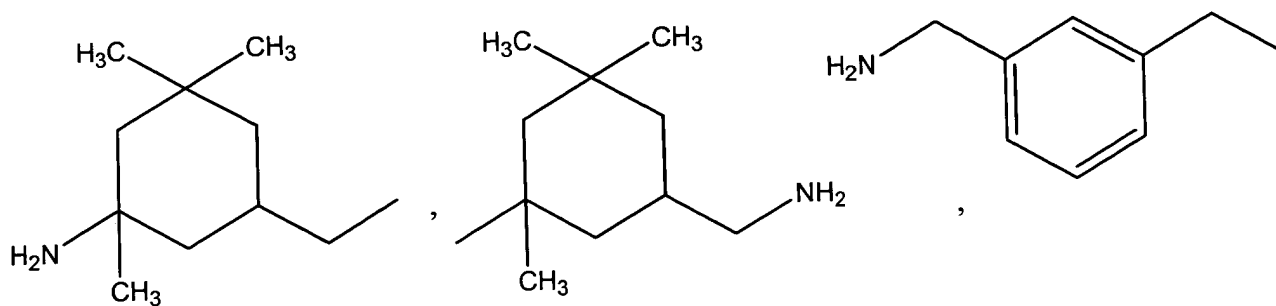
X is -O-,  $[-COO-]$ ,  $-C(=O)O$  or  $-CHR_4-$ , with  $R_4$  and  $R_3$  together forming an ethylene group,

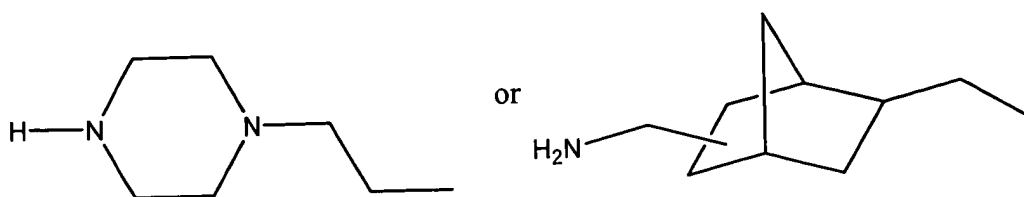
Please amend the specification at page 3 by replacing the formula for the tetravalent radical with the following formula:



Please replace the sixth paragraph on page 4 of the specification with the following paragraph:

Special preference is given to compounds of formulae Ia and Ib wherein  $[[R_1]] R_5$  is n-butyl, n-octyl, cyclohexyl, benzyl, 2-aminoethyl, 4-(aminomethyl)pentyl, 5-amino-2-methylpentyl, 3-dimethylaminopropyl, 3-methylaminopropyl, 4-aminocyclohexyl or a radical of formula  $-CH_2CH_2NHCH_2CH_2NH_2$ ,





Please amend the specification at page 5 by replacing the last paragraph with the following:

The episulfide of formula IIIa is then dissolved in an aprotic or protic organic solvent and, under inert gas (argon or nitrogen), reacted with the amine  $R_5\text{-NH-R}_2$ , the amount of the amine  $R_5\text{-NH-R}_2$  preferably being so selected that there are from 1 to 10  $[\text{NH}]$  amine groups for one episulfide group. Preferred solvents are alcohols (e.g. methanol, ethanol, tert-butanol) and aromatic hydrocarbons, for example toluene and xylene

Please amend the specification at page 7 by replacing the first full paragraph with the following:

Episulfides can, for example, also be ~~synthesised~~ synthesized from the corresponding epoxides by reaction with triphenylphosphine sulfide.

Please replace the first full paragraph on page 11 with the following paragraph:

As component  $[[A]]$  C of the substance mixtures in accordance with the invention, preference is given to cycloaliphatic and aliphatic amines, especially the amines of formulae  $R_5\text{-NH-R}_2$  and  $E\text{-(NHR}_2\text{)}_{m+1}$  used for preparation of the polymercaptopolyamines according to the invention.

Please replace the paragraph bridging pages 12 and 13 with the following paragraph:

I. Preparation of compounds of formula  $[[I]]$  Ia and Ib

a) General procedure for the preparation of polyepisulfides:

The ~~polyepoxide~~ of formula II is epoxy compounds of formula IIa or IIb are dissolved in an amount of solvent that is from 0.5 to 5 times the amount of the ~~polyepoxide~~ epoxy compound and is stirred, under nitrogen,

with thiourea or alkali-metal or ammonium thiocyanate (0.8-1.2 equivalents of sulfur per epoxy equivalent) at 60-100°C until the epoxy content has fallen to nearly zero.

After separating off the by-products by means of filtration, extraction or phase separation, the polyepisulfide is isolated as a result of concentration by evaporating off the solvent.

b) General procedure for the preparation of polymercaptopolyamines:

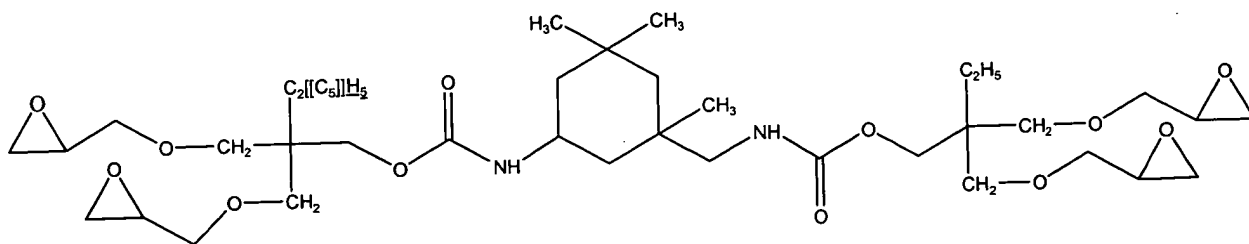
The polyepisulfide is dissolved in an amount of solvent that is from 0.5 to 5 times the amount of the polyepisulfide and under nitrogen and with vigorous stirring, is combined with the amine (either  $R_5-NH-R_2$  and  $E-(NHR_2)_{m+1}$ ), which likewise has been dissolved in an amount of solvent that is from 0.5 to 5 times the amount of the amine. The amount of amine is selected so that there are from 1 to 10  $[[NH_2]]$  amine groups for one episulfide group. After stirring at 60-100°C for from 0.2 to 3 hours, the solvent is distilled off under reduced pressure. To isolate the polymercaptopolyamine of formula  $[[I]]$  Ia or Ib, the excess amine reagent is removed by means of vacuum distillation at elevated temperature. In one embodiment of the invention, the excess amine is not removed and the mixture of the excess amine  $[[R_1-NH_2]]$  and the polymercaptopolyamine of formula  $[[I]]$  Ia or Ib is used as a hardener for epoxy resins.

Please replace the paragraph bridging pages 13 and 14 with the following paragraph:

In accordance with the above-mentioned procedure, polymercaptopolyamines according to the invention (~~Examples I.1-I.19~~) (Examples I.1-I.46) are prepared from the following ~~diamines  $R_1-NH_2$~~  amines and ~~epoxides of formula II~~ epoxy compounds of formula IIa or IIb:

BA:	n-butylamine
OA:	n-octylamine
CYA:	cyclohexylamine
BZA:	benzylamine

MBA: methylbutylamine  
DMDP: N,H-demethyl-1,3-diaminopropane  
MDP: N-methyl-1,3-diaminopropane  
DACY: 1,2-diaminocyclohexane  
AEP: N-2-aminoethylpiperazine  
DETA: diethylenetriamine  
IPD: isophoronediamine  
MXDA: meta-xylylenediamine  
DYTEK-A: 1,5-diamino-2-methylpentane  
NBDA: isomeric mixture of 2,5- and 2,6-bis(aminomethyl)norbornane  
EDA: ethylenediamine  
epoxide 1: liquid diglycidyl ether of bisphenol A having an epoxy content of 5.25-5.4 eq./kg  
epoxide 2: liquid mixture of diglycidyl ether of bisphenol A and diglycidyl ether of bisphenol F having an epoxy content of 5.5-5.8 eq./kg  
epoxide 3: 1,4-bis(hydroxymethyl)cyclohexane diglycidyl ether  
epoxide 4: epoxy phenol novolak having an epoxy content of 5.6-5.8 eq./kg  
epoxide 5: diglycidyl ether of hydrogenated bisphenol A  
epoxide 6: tetraglycidyl ether of formula



epoxide 7: di(β-methylglycidyl) ether of bisphenol A  
epoxide 8: trimethylolpropane triglycidyl ether  
epoxide 9: hexahydrophthalic acid diglycidyl ester (epoxy content: 5.6-6.2 eq./kg)

epoxide 10: phenyl glycidyl ether

Please replace the first footnote on page 16 with the following footnote:

\*) mixture of amine  $[[R_1-NH_2]]$  and polymercaptopolyamine; excess  $[[R_1-NH_2]]$  amine not distilled off